AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings containing replacements for Figs. 1 and 2 include changes to include the legend "PRIOR ART" for Figs. 1 and 2.

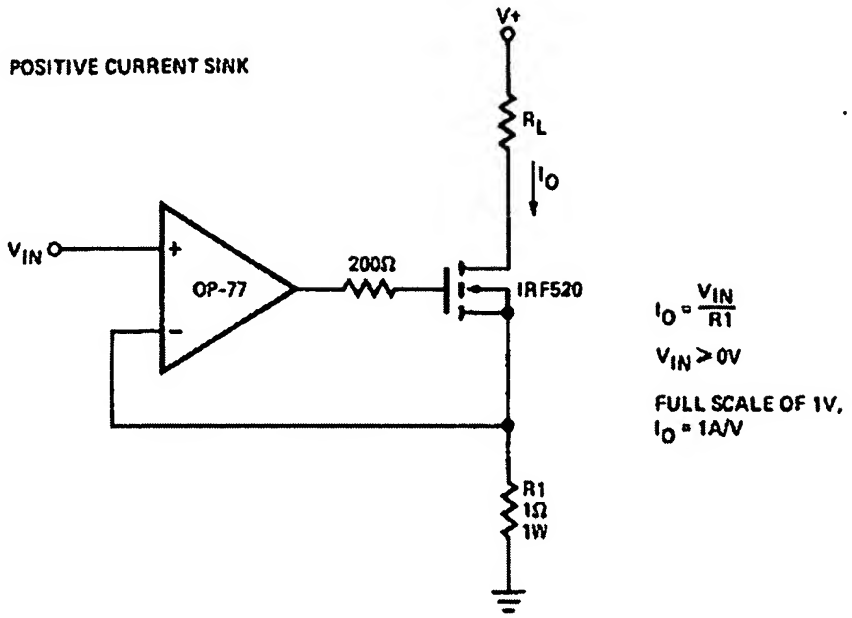
REMARKS

In the Official Action of June 15, 2005, claims 1-36 were rejected, a new title was required and corrected drawings were also required. In response, the title has been amended, replacement drawing sheets are supplied for Figures 1 and 2, including the legend "prior art," and Applicant requests reconsideration of the rejection of the claims.

A single rejection has been made against all of claims 1-36, as obvious over APA in view of Wadhwa '725. The APA is Tuthill '012 cited on page 1 of the Application as filed. The Examiner misapprehends the references and thus comes to an erroneous conclusion.

The present invention relates to a category of bandgap reference circuits called switched bandgap references, which differ from the other main category of bandgap reference circuits, the continuous variety, in that continuous circuits do not generate the bandgap voltage through a switching mechanism which is used by the switching variety of bandgap reference circuits. The difference between the two types of references is detailed in the first paragraph of the Background section of the present application.

The Wadhwa '725 reference is misleading in that the title is "Switched Capacitor Current Reference Circuit." What it actually discloses, however, is a continuous bandgap voltage reference (operating on the basis of generating of a ΔV_{be} voltage using transistors 112 and 114) whose voltage output is then converted using a voltage-to-current (V to I) converter to a current output. If one looks closely at the circuitry of Fig. 9, shown in the Office Action, one can see (1) that the opamp 122 and MOS device 130 which drive the switched capacitor resistor 134 are simply performing the operation of a classic V to I converter and (2) the resistor that is normally present in such a converter is replaced by the switched capacitor circuitry (which is labeled a "switched capacitor resistor"). For example, consider the classic V to I converter such as that shown below:



The circuit of Wadhwa only differs in that the resistor R1 is replaced with a switched capacitor configuration that emulates a resistor. V_{IN} is the input from the bandgap portion of the Wadhwa circuit; so, in essence, the reference has already been formed and this portion of the circuit only converts that voltage to a current. This point is even explained in the abstract of Wadhwa '725, where it details that "The reference current is generated by applying the reference voltage [i.e., V_{IN}] across a resistor emulated with a pair of switched capacitor circuits [i.e., R_1."

Therefore, when a person of ordinary skill in the art examines the Tuthill '012 reference and the Wadhwa '725 reference, he or she actually will be looking at two different categories of bandgap references, categories that take different and mutually exclusive approaches. It would therefore not at all be appropriate to combine them and there is no motivation to do so!

Moreover, even if one were in some way prompted to combine the teachings of the references (which Applicant does not accept and specifically disputes), what would be the result? Certainly not the claimed invention. All that one could imagine is the conversion of the voltage output generated by the '012 reference to a current output using the voltage driver and switched

capacitor arrangement of the '725 reference. That result, of course, is something very different from the invention claimed in claims 1-36.

More particularly, if one looks at the individual independent claims, one will see that all of the independent claims categorize the circuit as a "switched capacitor bandgap reference" circuit. This category of circuit is not the same as that of the '725 reference. Further, claim 1 details in clause (d) that the circuit includes "a capacitor shield adapted to shield said capacitor network" and in clause (e) that the voltage driving circuit is "coupled to said capacitor shield." This specific set of limitations addresses the parasitic capacitances that are inherent in the type of bandgap reference circuits exemplified by the '012 patent, a switched configuration circuit. There is no teaching in the '725 patent addressing this problem, because the problem is not important in the class of circuits to which the '725 patent belongs. Therefore, one skilled in the art receives from the '725 patent no teaching as to how to address this problem. The specific claimed configuration cannot be found, therefore, in the combination of the references.

Accordingly, for each of the multiple reasons given above, the rejection of claim 1 should be withdrawn.

Regarding claim 25, it will again be seen that the feature of coupling a voltage follower to the shield of the switched capacitors is explicitly claimed. This limitation is not present in or taught by either of the references. Consequently, even assuming, *arguendo*, the combination of the references to have been properly motivated, this limitation nevertheless cannot be present in such a combination and the rejection of claim 25 should be withdrawn.

Turning to claim 28, one will observe that the feature of a curvature correction component, among others, is provided. There is no disclosure in either of the references to provide for curvature correction and no teaching as to how to achieve same. Thus, even a properly motivated combination of the references, if one were possible, would lack this limitation. Accordingly, the rejection of claim 28 also should be withdrawn.

Manifestly, therefore, although a correspondence may be noted between the individual components in both the claimed invention and the Wadhwa '725 reference, context cannot be ignored. The purpose and operation of the circuits, and thus the totaled claimed configuration, is so different that one of ordinary skill in the art would not have been motivated to combine the '725 and '012 teachings. Further, even if one did combine the references, the result would not be the claimed invention.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

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